

## PDB30

**COST-EFFECTIVENESS OF PREVENTIVE INTERVENTIONS IN DIABETES MELLITUS AND ITS (MACROVASCULAR) COMPLICATIONS: A SYSTEMATIC LITERATURE REVIEW**

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**INTRODUCTION:** Diabetes Mellitus is one of the major chronic diseases in Western societies, causing considerable comorbidity of cardiovascular diseases and premature death. Because of the variety of risk factors for diabetes mellitus and different macrovascular complications, the set of potentially interesting interventions is quite large. For policy makers with limited budgets, the question thus arises in what area of diabetes prevention, health care money is spent most effectively. **OBJECTIVE:** The aim of the present study was to review the literature on economic evaluation of interventions for prevention of diabetes Type-2 or its macrovascular complications, to describe their results and to identify the interventions that require additional research. **METHODS:** A systematic review of the literature was conducted. The interventions were classified by type of prevention. The characteristics of the selected studies (with life years gained or quality adjusted life years as an outcome measure) were described in a database, to generate summary tables. To be included, studies had to give a full economic evaluation of effects of the intervention. All studies were scored for quality using the BMJ checklist. **RESULTS:** In total 23 studies with life years gained or quality adjusted life years as an outcome measure were selected. Two studies focused on primary prevention, one on screening, and 20 studies evaluated interventions for the prevention of macrovascular complications. **CONCLUSIONS:** Tight blood pressure control is a cost effective intervention compared to less tight control. Medication to reduce both overweight and hyperglycemia was found to be cost saving to moderately cost-effective. Primary prevention of Type-2 diabetes also appeared to be cost-effective and cost saving, but further research is needed because only two studies were available. The results of medication interventions to reduce overweight, to reduce hyperglycemia, and to reduce dyslipidemia vary considerably, warranting further economic analysis to identify cost-effective strategies.

## PDB31

**A LIFETIME MODELLED ECONOMIC EVALUATION COMPARING PIOGLITAZONE AND ROSIGLITAZONE FOR THE TREATMENT OF TYPE-2 DIABETES MELLITUS IN THE UK**

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**OBJECTIVES:** Our objective was to develop a lifetime model of Type-2 diabetes mellitus and its sequelae in order to compare the costs and benefits of pioglitazone versus rosiglitazone oral treatment. **METHODS:** A decision-analytic model employing a Monte Carlo simulation of a Markov process was constructed. The model incorporated efficacy data from a large (n = 802) key clinical trial comparing the glycaemic and lipid control of pioglitazone and rosiglitazone (Study H6E-US-GLAI). These efficacy data were used with a recently published UKPDS algorithm to calculate the risk of diabetic complications, including mortality, as patients progressed through each treatment arm in the model. The model was calculated from the perspective of the National Health Service in the UK and included direct health care costs only. Patient outcomes measured in the model included life-

expectancy and quality-adjusted life-expectancy. **RESULTS:** Patients treated with pioglitazone achieved a reduction in their total cholesterol to high-density lipoprotein ratio (TC:HDL) of 0.34 whereas the TC:HDL increased by 0.65 in those receiving rosiglitazone (p < 0.001). The HbA1c profile was similar between the treatment groups (p = 0.13). Other known risk factors for diabetes complications were also found to be similar. The lifetime health care costs per-patient estimated by the model were ≤585 for pioglitazone and ≤10,299 for rosiglitazone. Patients treated with pioglitazone had a discounted life-expectancy of 8.83 years versus 8.79 years for rosiglitazone patients. Pioglitazone patients also experienced additional quality-adjusted life-years (6.8070 vs. 6.7686). With improved health outcomes and lower costs, treatment with pioglitazone dominated rosiglitazone treatment. **CONCLUSIONS:** High quality evidence from a large head-to-head trial indicates superior serum lipid profiles and similar HbA1c profile in patients treated with pioglitazone. In addition, treatment with pioglitazone is associated with lower costs than rosiglitazone. It follows that pioglitazone is the cost-effective treatment choice for this patient population.

## PDB32

**ECONOMIC EVALUATION OF THE LAPTOP-STUDY RESULTS**

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**OBJECTIVES:** To perform an economic evaluation of once-daily insulin glargine plus oral antidiabetic therapy (BOT) versus twice-daily administration of pre-mixed insulin (30/70) based on the LAPTOP-Study results from the German health insurance's (GKV) perspective. **METHODS:** A cost-minimization analysis was performed from the GKV viewpoint taking into account insulin-naïve type-2 diabetes mellitus patients poorly controlled with oral antidiabetic drugs (OAD). First year of insulin treatment was analyzed. Costs included medication, application devices and blood sugar control. Other costs were either the same in both groups or not relevant for the GKV perspective. Underlying prices were retail prices. Insulin use for the first 24 weeks and OAD use were taken from the study results, blood sugar control followed the study's recommendations. Insulin use for weeks 25 to 52 was extrapolated. Although the study results showed a slight improvement in the BOT arm we assumed equality. Univariate sensitivity analyses were performed to account for uncertainties. **RESULTS:** Annual insulin use was 10,500 I.U. and 23,900 I.U. in the BOT and pre-mixed insulin group, respectively. Assuming base-case conditions overall annual costs were €236 lower for the BOT regimen. Parameter variation of +/-20% still kept the difference between the regimens negative, i.e., favourable for BOT. Also some variations reflecting potential differences between the study results and German treatment reality were all favourable for BOT. If varied individually, insulin prices and insulin use had the highest impact, but if insulin use and prices were varied in both groups simultaneously, the number of blood sugar controls per day had the highest impact. **CONCLUSIONS:** In Germany, BOT with insulin glargine is a cost-saving form of therapy compared to twice-daily pre-mixed insulin during the first year of treatment in type-2 diabetes patients poorly controlled with OAD drug treatment.